



# **CURRENT Group, LLC**

## **Broadband Overview**

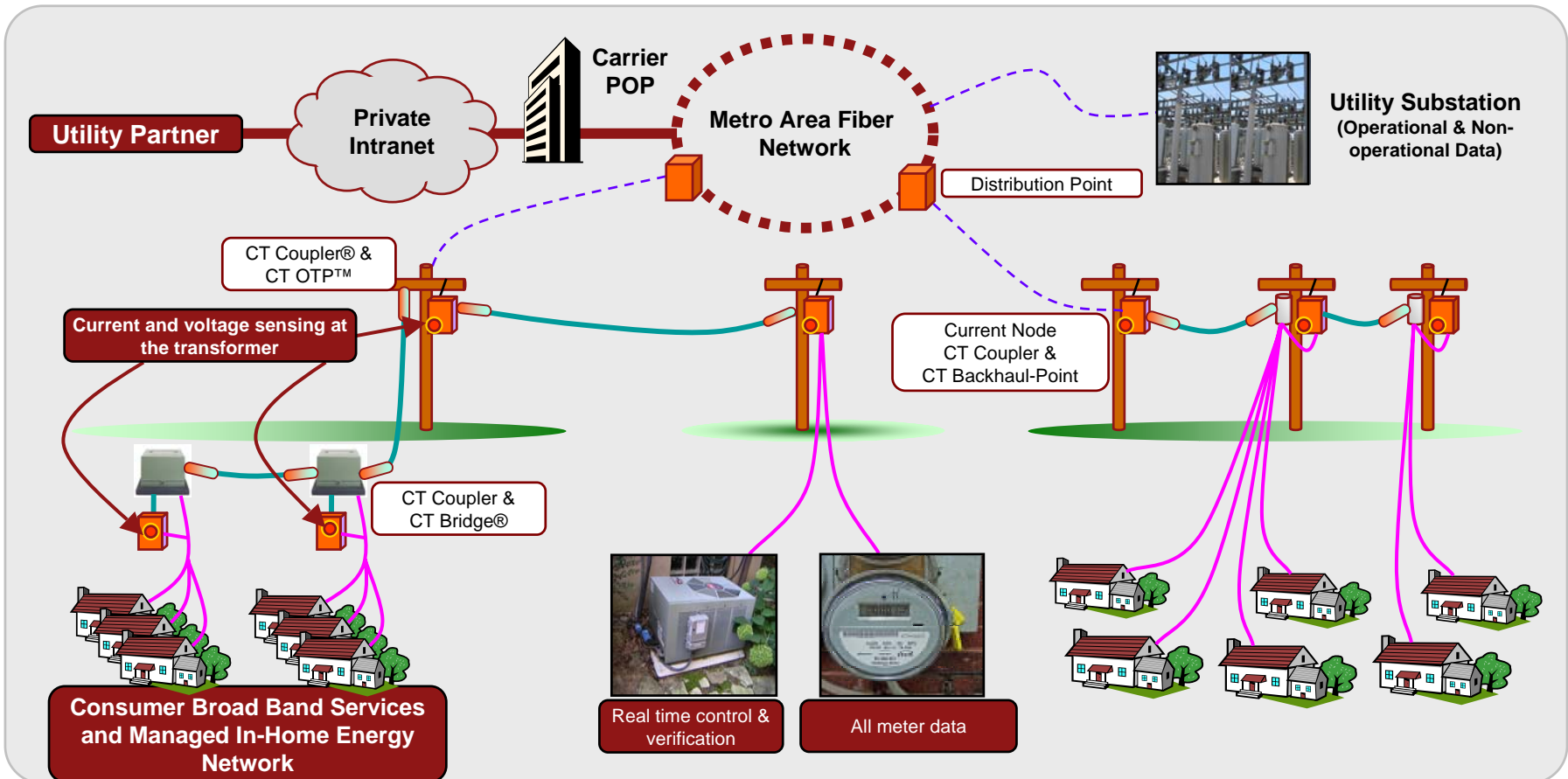
*November 2007*



# CURRENT BPL Network Architecture



BPL solutions can provide advanced sensors distributed throughout the network and a high speed, symmetrical communications network



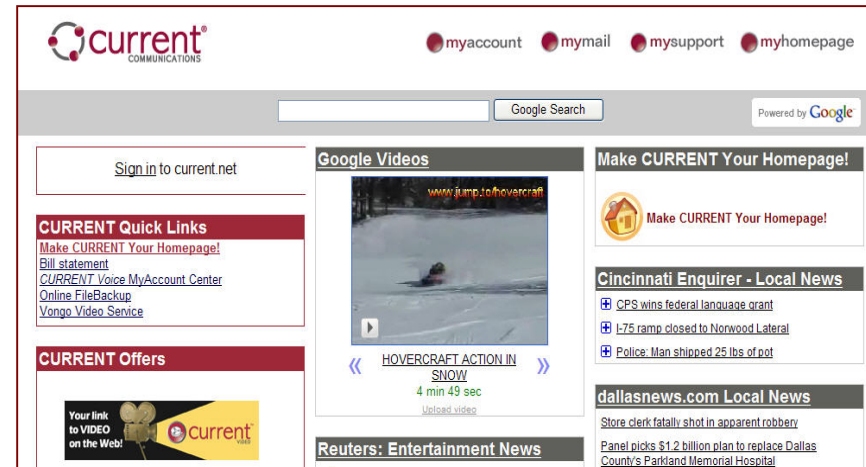
# CURRENT Communications Services

## Consumer Broadband Services



CURRENT BPL solution provides high performance consumer communication services

- Alternative to cable and DSL for wholesale or retail service offering:
  - Opportunity to leverage brand and customer relationships of the electric utility
  - Opportunity to leverage brand and customer relationships of other retail marketers



**CURRENT.NET Customer Portal**



### **Powerline Modems:**

*Available with  
Wireless, Ethernet,  
or USB Interfaces*

### Broadband High-Speed Internet Service

10+ Mbps data rate

High “peak hour” available capacity

#### Features

##### Truly Plug-and-play

- Just plug in to any electrical outlet
- No technician visit, new wiring or software installation is required

##### Low-Latency + Near-Symmetrical

- Quality of service applications
- 10+Mbps downstream bandwidth
- 10+ Mbps upstream bandwidth—10x that of cable and ADSL

##### Instant Local Area Network (LAN)

- All electrical outlets become ports for broadband access and LAN;
- simple wireless overlay and integration

#### Services

##### Data

- High performance and reliability both up and downstream
- Enables web 2.0 applications and features

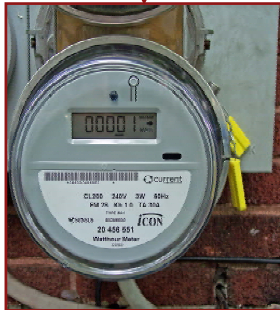
##### Voice

Voice over Internet Protocol (VoIP)

##### Video

Video on demand  
Video Instant messaging

## Multiple Services from a single fixed network



### “Smart Grid” Services

- Applications for electric utilities that increase reliability and security while decreasing costs



### Communications Services

- High performance voice, video and data services accessible through electric outlets for residential and commercial customers



### Additional Services

- Wireless communications, homeland security, weather monitoring and others

BPL Market Size (Newton-Evans July 2007)	U.S. Households Passed	Worldwide Households Passed	U.S. Subscribers	Worldwide Subscribers
2006	745k	1.3 M	75 K	215 K
2010	20 M	69.5 M	2.5 M	7.2 M

### Smart Grid can improve energy efficiency and reliability

**“If we could make the electric grid even 5 percent more efficient, we would save more than 42 gigawatts of energy: the equivalent of production from 42 large coal-fired power plants. Those are plants that we would not need to build and emissions that we would not produce” (Commissioner Wellinghof, U.S. Federal Energy Regulatory Commission testifying to U.S. Congress, May 2007)**

**“A peer-reviewed analysis of 11 studies in 2004 indicated a median achievable economic potential (savings from the intelligent air conditioner and similar devices), of 24% of total U.S. electricity demand . . . Customers equipped with enabling technologies (automatic price-sensitive thermostats) delivered a response that was twice as high as those customers who did not have enabling technology.” (Michael Howard of EPRI testifying to U.S. Congress, May 2007)**

**The grid is going to have to be updated to handle 20-30% of renewables that many state renewable portfolio standards are calling for . . . That can be challenging with intermittent resources such as wind. . . . Turbines have to shut down to protect themselves when wind hits 60 mph and if wind blows at night the Danes often have to shut off other generators. (EPRI President Dr. Steven Specker presenting at the 2007 Deloitte Energy Conference)**

# CURRENT Smart Grid

*Emerging Issues require Utilities implement a Smart Grid*



Over last several years, utility executives and regulators have become increasingly concerned about multiple issues that can only be addressed through an enterprise wide smart grid solution

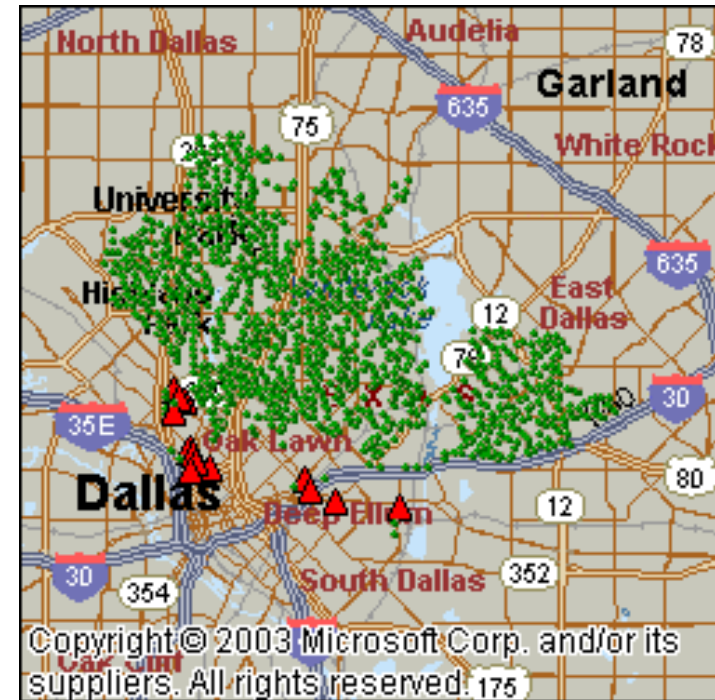
Cost and Uncertainty about New Generation and Transmission	Environmental Impact
Increasing Requirements for the use of Renewables and Distributed Generation	Aging workforce

Smart Grid Enterprise Solution	Enhanced Demand Response	<ul style="list-style-type: none"><li>▪ Peak shaving through demand side management programs<ul style="list-style-type: none"><li>– Enhance point load control and TOU programs with real-time verification and measurement</li><li>– Enable smart home with intelligence appliances</li></ul></li><li>▪ Inherent robust and ubiquitous HAN network</li></ul>
	Smart Grid System-wide	<ul style="list-style-type: none"><li>▪ Improving CAIDI, SAIDI, and SAIFI</li><li>▪ Customer service and field maintenance labor reduction and improved productivity</li><li>▪ Improved revenue assurance and receivables</li><li>▪ Conservation Voltage/Var control</li><li>▪ Vegetation management</li><li>▪ Regulatory compliance</li><li>▪ Reduced cost of insurance (outage related)</li></ul>
	Asset Management	<ul style="list-style-type: none"><li>▪ Optimized data collection and system planning</li><li>▪ Transformer, Capacitor bank and substation equipment automation and management</li><li>▪ Asset life extension and failure avoidance</li><li>▪ Reduced cost of URD cable replacement</li></ul>
	Advanced Future Grid Enhancements	<ul style="list-style-type: none"><li>▪ Plug-in Electric Hybrid Vehicles (PHEVs)<ul style="list-style-type: none"><li>– Demand response, load shedding/shifting capability</li></ul></li><li>▪ Management of distributed generation (including PHEV)</li><li>▪ Differentiated service offerings</li></ul>



CURRENT awarded the largest BPL / Smart Grid deployment and services agreement ever by TXU

- Services Include:
  - Smart Metering – over 1.8 million meters in Dallas/Fort Worth
  - Transformer Deterioration & Overload Detection – 400,000+ transformers
  - Outage Detection and Restoration
  - Substation Connectivity
  - Exclusive right to operate network to sell retail communications services
- Actively reading meters and billing customers using system
- Present Status
  - Over 100,000 homes passed
  - Approximately 125,000 homes passed by the end of 2007
  - Rolling out broadband with DirecTV



**Dallas Deployment Map**



# CURRENT Overview

## Success to Date – Duke Energy



- Nation's 2nd largest BPL deployment with 50,000+ homes passed in Cincinnati
- Today's offering: Tiered data access (up to 3Mbps symmetric) + VoIP
- Approximately 50% of subscribers switched from DSL or cable
- 95% customer satisfaction
- Competing head-to-head with Time Warner and Cincinnati Bell

# Summary

## *Smart Grid Offers a Clean Energy Opportunity*



***The distribution of electricity is still largely a traditional rate base-regulated industry. Rate base regulation makes it difficult for regulated companies to strive for increased efficiencies or demand reduction.***

### **Utility Incentives are becoming aligned to implement Smart Grid**

- Utilities should have incentives to reduce, not increase demand
- Utilities should have incentives to reduce line losses and make other grid efficiency improvements
- Utility's return on Smart Grid programs should be competitive with the returns on capital for power plants that increase potential revenue
- Regulators need to provide certainty to Utilities about how they will respond to Smart Grid programs

### **Public Support of Alternative, Renewable fuels or Smart Grid conservation measures should be balanced**

- Smart Grid should be viewed as a renewable resource
- Distribution Grid can make significant contribution to improving grid efficiency and should be equal to emphasis placed on transmission

### **Smart Grid technology will have a meaningful impact on reducing CO<sub>2</sub> emissions**

- The leader in Smart Grid and differentiated BPL services
- Integrated communications, sensors and management and analytic software solution
- Largest U.S. Smart Grid services and broadband deployment in progress with Oncor (formerly TXU ED) (1.8M homes, 200K businesses, 450K elements)
- Selected as Global supplier for AES Corporation with initial deployment in São Paulo, Brazil where AES Eletropaulo services over 5 million customers
- Working with Iberdrola, Enel and EDF in an EU funded program to develop European Smart Grid with a focus on wide-scale deployment of distributed generation, renewables and demand side management
- Winner of 2006 Red Herring's Top 100 Private Companies and 2006 Platts Global Energy Commercial Technology of the Year award
- Investors include:



GE  
Energy Financial Services

